

Understanding Agriculture's Effects on Amphibians and Reptiles in a Changing World
St. Louis, Missouri, USA
February 6-8, 2007

Tuesday, February 6, 2007

7:45 a.m. Continental Breakfast

8:00 - 8:20 a.m. Welcoming remarks

Session 1
The Big Picture

	Authors	Title
8:20 - 8:55 a.m.	David Pimentel*	Agricultural impacts on biodiversity and species declines

8:55 - 9:25 a.m.	Stephen Polasky*	Economics and agriculture: past, present and future
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9:25 - 9:45 a.m. Break

9:45 - 10:15 a.m.	Robin D. Moore* and L. Gorenflo	Current and future threat of agriculture expansion on threatened amphibians
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10:15 - 10:45 a.m.	Alisa Gallant*	Potential threats to amphibian populations from global to regional changes in land cover and land use
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10:45 - 11:15 a.m. Discussion

Session 2
Emergent Issues

11:15 - 11:40 a.m.	Henna Piha*, Miska Luoto, Markus Piha and Juha Merilä	Climate change and its potential impacts on agricultural land use and herpitiles
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11:40 - 12:30 p.m.	Lunch	Provided
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12:30 - 12:55 p.m.	David Pimentel*	Title forthcoming
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12:55 - 1:20 p.m.	James D. Harwood* and John J. Obrycki	Ecological effects of genetically engineered organisms in agriculture
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1:20 - 1:50 p.m. Discussion

1:50 - 2:10 p.m. Break

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Session 3

Habitat

2:10 - 2:30 p.m.	Cristiano Nogueira*	Habitat loss and squamate reptile diversity in the Cerrado savanna hotspot, one of the most threatened regions of the Neotropics
2:30 - 2:50 p.m.	Peter C. Trenham*	The importance of upland habitats for amphibian populations
2:50 - 3:10 p.m.	Catherine M. Johnson*, Lucinda B. Johnson, Joseph Murphy, Carl Richards, Tom Hollenhorst, and Val Beasley	Anurans as bio-indicators of ecological health in an agricultural landscape: The importance of spatial context
3:10 - 3:30 p.m.	Richard M. Lehtinen* and Gregory J. Lipps, Jr.	Declining amphibians in agroecosystems: A landscape level analysis
3:30 - 3:50 p.m.	Matthew J. Gray*, and Loren M. Smith	Influence of agricultural land use on postmetamorphic body size of Southern High Plains amphibians
3:50 - 4:10 p.m.	Dennis Jorgensen* and C.C. Gates	Prairie rattlesnake foraging strategies: The influence of changing landscapes and changing risks
4:10 - 4:30 p.m.	Agnes Janin, Jean-Paul Lena, Christophe Delacourt, Pascal Allemand, and Pierre Joly*	Landscape matrix and toad presence: Toward a tool for assessing connectivity effects
4:30 - 5:00 p.m.	Discussion	

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6:00 - 8:00 p.m. - Poster Session and Mixer - Hors d'oeuvres and beverages provided

Poster category	Presenter	Title
Habitat	Elizabeth C. Burton*, Matthew J. Gray, and A. Chandler Schmutzer	Influences of cattle on postmetamorphic amphibians in Cumberland Plateau wetlands
	Tim B. Graham*	Toad population dynamics in altered semi-arid riparian systems: Differences in size class distribution as an indication of chronic riparian/aquatic ecosystem disturbance
	Katherine R. Greenwald*, H. Lisle Gibbs, Thomas A. Waite	Gene flow and habitat connectivity in marbled salamander (<i>Ambystoma opacum</i>) populations fragmented by agricultural and residential development
	Jennifer H. Olker*, Tom Hollenhorst, Lucinda B. Johnson, Patrick K. Schoff, Catherine Johnson, and Glenn Guntenspergen	Broadscale land use impacts on northern leopard frog (<i>Rana pipiens</i>) in the upper Midwest
	Cynthia A. Paszkowski* and Sara E. Terry	Distribution and abundance of amphibians across land-use types in Alberta's aspen parkland
	R. Heath Rauschenberger*, and Jerry L. Farris	Preliminary survey of herptofaunal communities in agricultural ditches in northeastern Arkansas
	Kevin R. Russell*, Breanna L. Riedel, W. Mark Ford, and Katherine P. O'Neill	Habitat relationships of red-backed salamanders (<i>Plethodon cinereus</i>) in an Appalachian grazing system
	A. Chandler Schmutzer*, Matthew J. Gray, and Elizabeth C. Burton	Influences of cattle on larval amphibians and the aquatic environment in Cumberland Plateau wetlands

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	Loren M. Smith*, Scott T. McMurry, Todd A. Anderson, Kari D. Dupler, Dana M. Ghioca, Mary B. Gutierrez, Jo-Szu Tsai, and Louise S. Venne	Diversity and physiological fitness of amphibians in playa wetlands: effects of cultivation, climate, and conservation practices
	Bethany K. Williams*, Raymond D. Semlitsch	Landscape-level and local predictors of amphibian diversity and abundance at agriculturally impacted streams
Contaminants	Bob Brodman*, Kristin Laurie, Dan Newman, Ryan McCoy, Cheryl Zakowski, and Kyle Bender	Ecological effects of an herbicide on tiger salamanders and their prey
	Shane R de Solla*	Hypoxia tolerance of Ontario turtles and its relevance to conservation
	Shane R. de Solla* and Pamela A. Martin	Toxicity of nitrogenous fertilizers to eggs of snapping turtles (<i>Chelydra serpentina</i>) in field and laboratory settings
	Julia E. Earl* and Howard H. Whiteman	Lethal and sublethal effects of nutrient pollution on amphibians
	Jennifer L. Loda* and David L. Otis	Relationships between amphibians, water quality, and landscape context of wetlands in Iowa
	Tana V. McDaniel*, Pamela A. Martin, Chris Marvin, John Struger, Mark McMaster and Jim Sherry	Is exposure to agricultural run-off from row crop agriculture leading to sexual disruption in northern leopard frogs (<i>Rana pipiens</i>)? A case study from south western Ontario
	Spencer R. Mortensen*, Katherine H. Carr, Steven L. Levine, Donna R. Farmer, and Joy L. Honegger	Analysis of amphibian effects from exposure to glyphosate formulations and implications for ecological risk assessment

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R. Heath Rauschenberger*, Timothy S. Gross, Jon J. Wiebe, Jerry L. Farris, Stanley E. Trauth Effects of agrochemicals on the development of American alligators from central Florida and alligator snapping turtles from Arkansas

Patrick K. Schoff*, Angela K. Rohweder, Jennifer H. Olker, Tom Hollenhorst, Lucinda B. Johnson, and Glenn Guntenspergen A survey of atrazine in prairie pothole wetlands and preliminary gonadal examination of *Rana pipiens*

Donald W. Sparling* Extreme toxicity of endosulfan and chlorpyrifos to California amphibians

Donald W. Sparling* and Manuel E. Ortiz-Santaliestra Alteration of larval development and metamorphosis in *Rana sphenoccephala* by nitrate and perchlorate, two commonly occurring chemicals in fertilizers

Sara I. Storrs* and Raymond D. Semlitsch Life-history characteristics influence susceptibility of the reproductive system to endocrine-disrupting chemicals

James R. Vonesh* and Julia C. Buck Pesticide alters oviposition site selection in gray treefrogs

Abnormalities and Pathogens

Debra L Miller*, Matthew J Gray, A Chandler Schmutzer, and Charles A Baldwin Frog virus 3 prevalence in tadpoles inhabiting cattle-access and non-access wetlands in Tennessee

Jason R. Rohr*, Anna M. Schotthoefer, Rebecca A. Cole, Catherine M. Johnson, Lucinda B. Johnson, and Val R. Beasley The role of landscape and local variables in the prevalence and abundance of amphibian helminth infections

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**Conservation and
Management**

Jennifer S. Anderson-Cruz*

Natural Resources Conservation Service addressing Iowa herpetofaunal species of conservation concern through the utilization of USDA Farm Bill Programs

David M. Mushet*, Ned H. Euliss, Jr., and Craig A. Stockwell

The U.S. Geological Survey and the U.S. Department of Agriculture: Working together to quantify the effects of conservation programs on amphibian habitat suitability

Ivana M. Noell*

Technical workshops on the biology and management of listed species in Alameda County, California, address agricultural effects on amphibians

Charles A. Rewa*

Documenting fish and wildlife benefits of the Farm Bill: The wildlife component of the Conservation Effects Assessment Project

Susan Walls*, Stephen Faulkner, Wylie Barrow, and Bob Keeland

Evaluating wetland restoration practices in the Lower Mississippi Valley: Impacts on amphibian species richness

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Wednesday, February 7, 2006

7:45 a.m. Continental Breakfast

8:00 - 8:15 a.m. Opening remarks

	Authors	Title
8:15 - 8:40 a.m.	Val R. Beasley*, Anna M. Schotthoefer, Rebecca A. Cole, Amy L. Reeder, Marilyn O. Ruiz, Allan P. Pessier, Catherine M. Johnson, Patrick K. Schoff, Stephen G. Diana, Joseph E. Murphy, Camilla L. Lieske, Jeffrey M. Levengood, Karen R. Lips, Lauren E. Brown, Marvin D. Piwoni, Donald K. Nichols, and Lucinda B. Johnson	The health and sustainability of Midwestern and global amphibian communities: Research findings and opportunities for improved management

8:40 - 9:25 a.m. Discussion

Session 4
Contaminants

9:25 - 9:45 a.m.	William Battaglin*	Pesticide and fertilizer use worldwide with examples from the United States: Is potential exposure widespread?
9:45 - 10:05 a.m.	David F. Bradford*, Edward M. Heithmar, Kerri Stanley, Laura L. McConnell, Donald W. Sparling, Staci L. Simonich, Nita G. Tallent-Halsell, Georges-Marie Momplaisir, Charlita G. Rosal, Lee A. Riddick, and Katrina E. Varner	Temporal and spatial patterns of airborne pesticides in the alpine environment of a declining California amphibian, the mountain yellow-legged frog
10:05 - 10:25 a.m.	Break	
10:25 - 10:45 a.m.	Keith R. Solomon*, Jim A. Carr, Louis H. du Preez, John P. Giesy, Ron J. Kendall, Ernest E. Smith, and Glen J. Van Der Kraak	Atrazine and amphibians: Risks in the agricultural landscape
10:45 - 11:05 a.m.	Rick A. Relyea*	Community ecotoxicology: When the dose does not make the poison

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11:05 - 11:25 a.m.	Michelle D. Boone*	Impacts of chemical contaminants on amphibian populations: Evaluating effects of chemical mixtures on amphibian metamorphosis
11:25 - 11:45 a.m.	Jason R. Rohr*, Lawrence Chien, Jake L. Kerby, Tyler Sager, Timothy M. Sesterhenn, Andy Sih, and Brent D. Palmer	Our present approach for deriving safe chemical concentrations and its consequences for the safety of our declining amphibians
11:45 a.m. - 1:00 p.m.	Lunch	On Your Own
1:00 - 1:20 p.m.	Shane R. de Solla*, Pamela A. Martin, Tana V McDaniel, Ryan Loveridge, Karen E Pettit, Christine A Bishop, John E. Elliott, and John Struger	Direct and indirect impacts of nutrient enrichment on amphibians and reptiles
1:20 - 2:30 p.m.	Discussion	
Session 5		
Abnormalities and Pathogens		
2:30 - 2:50 p.m.	Pieter T. J. Johnson*, Katherine L. Dosch, Richard B. Hartson, Jonathan M. Chase, Don Larson, Daniel R. Sutherland and Stephen R. Carpenter	Effects of aquatic eutrophication on parasite-induced malformations in amphibians
2:50 - 3:10 p.m.	Break	
3:10 - 3:30 p.m.	Klaus Henle*	From pattern to cause in amphibian anomalies: Possibilities and limitations
3:30 - 3:50 p.m.	Cindy Carey*	Pathogens and susceptibility to disease in amphibians
3:50 - 4:10 p.m.	Louise A. Rollins-Smith*, Douglas C. Woodhams, and Carlos Davidson	Agricultural practices, antimicrobial skin defenses, and global amphibian declines

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4:10 - 5:00 p.m. Discussion

Banquet, featured speaker, and St. Louis Zoo tour

5:45 p.m. Board buses at the Crowne Plaza Hotel
 Clayton for transport to the River Camp
 at the St. Louis Zoo

6:15 - 7:15 p.m. Cash bar at the zoo

6:45 - 7:30 p.m. Banquet

7:30 - 8:20 p.m. Featured speaker: Stephen Polasky Incorporating biodiversity
 conservation and ecosystem
 services into decision-making

8:30 - 10:00 p.m. Guided tour of the Charles H. Hoessle
 Herpetarium, St. Louis Zoo

8:30 p.m. Bus departs the zoo for the Crowne
 Plaza Hotel for those not touring the
 herpetarium

10:00 p.m. Final bus departs the zoo for the
 Crowne Plaza Hotel

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Thursday, February 8, 2006

7:45 a.m. Continental Breakfast

8:00 - 8:15 a.m. Opening remarks

	Authors	Title
8:15 - 8:40 a.m.	Tyrone B. Hayes*	Pesticides, endocrine disruption, environmental stress, disease and amphibian declines: Making the connections

Session 6

Conservation and Management

8:40 - 9:05 a.m.	C. Kenneth Dodd, Jr.*	Agriculture and herpetofauna: Conservation options in an era of decline
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9:05 - 9:25 a.m.	Jonathan M. Chase* and Amber Burgett	Amphibians in fragmented landscapes: Effects of pond density on salamander abundance and their role as top predators in food webs, with potential implications for conservation
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9:25 - 9:45 a.m.	J. Sean Doody, William S. Osborne, Bronwyn Rennie, and Christina M. Castellano*	Reconciling farming with wildlife: Monitoring vertebrate biodiversity in the rice agroecosystem of the Riverina Bioregion, New South Wales, Australia
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9:45 - 10:05 a.m.	Hwa-Ching Lin* and Li-Yi Cheng	Conservation of the endangered Taipei frog, <i>Rana taipehensis</i>
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10:05 - 10:25 a.m. Break

10:25 - 10:45 a.m.	Jason Tesauro*	The role of livestock grazing in the conservation and management of the bog turtle, <i>Glyptemys muhlenbergii</i>
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* = Presenter

